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Case Docket No. SJO000031US1

0035.0001

February 28, 2000

Express Mail Label No. EL484106401US

Dear Sir:

Transmitted herewith for filing is the patent application of

Inventor(s): N.D. Barret; J. Eaton; J. Nakamura; and D.M. Shaw

For: **METHOD, SYSTEM, AND PROGRAM FOR ELECTRONICALLY MAINTAINING MEDICAL
INFORMATION BETWEEN PATIENTS AND PHYSICIANS**

Enclosed are:

- ☒ 5 No. of Sheets of Drawings Sheet(s) of drawings (☒ informal) + 0 extra copies;
27 pages of Application; 17 pages of specification, 1 page of abstract
 An assignment of the invention to International Business Machines Corporation. (☒ Will follow.)
 An associate power of attorney.
 A verified statement to establish small entity status under 37 CFR 1.9 and 1.27.
☒ Declaration and Power of Attorney. (☐ Will follow.)
 Certified copy of Patent Application No. filed from which priority is claimed under 35 U.S.C. §119.
☐ IDS enclosed. ☐ with references.

CALCULATION OF FEES					
ITEM	NO. OF CLAIMS FILED MINUS BASE*	NO. OF CLAIMS OVER BASE	X SM/LG ENTITY FEE	\$ AMOUNT	\$ FEE
A TOTAL CLAIMS FEE	36 - 20* =	16	X \$9 or \$18	\$288	
B INDEPENDENT CLAIMS FEE**	5 - 3* =	2	X \$39 or \$78	\$156	
C SUBTOTAL - ADDITIONAL CLAIMS FEE (ADD FINAL COLUMN IN LINES A + B)					444
D MULTIPLE-DEPENDENT CLAIMS FEE				SMALL ENTITY FEE = \$130; LARGE ENTITY FEE = \$260	\$0
E BASIC FEE*				SMALL ENTITY FEE = \$345; LARGE ENTITY FEE = \$690	\$690
F TOTAL FILING FEE (ADD TOTALS FOR LINES C, D, AND E)					\$1,134
G ASSIGNMENT RECORDING FEE				\$ 40	\$
**LIST INDEPENDENT CLAIMS 1, 11, 17, 25, 31					

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Respectfully submitted,

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PATENT
SJO000031US1
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application for
N.D. Barret, J. Eaton, J. Nakamura
and D.M. Shaw
Serial No.: --
Filed: February 28, 2000
For: **METHOD, SYSTEM, AND
PROGRAM FOR ELECTRONICALLY
MAINTAINING MEDICAL
INFORMATION BETWEEN PATIENTS
AND PHYSICIANS**

Examiner: --

Art Unit: --

CERTIFICATE OF MAILING

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I hereby certify that patent application papers, including specification, claims and 5 sheets of informal drawings are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on the date indicated above and is addressed to the Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231.

February 28, 2000

(Date of Deposit)

Patricia McLaughlin

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(Signature)

0035.0001 SJO000031US1 PATENT EL484106401US

BACKGROUND OF THE INVENTION

The present invention relates to a system, method, program for electronically maintaining medical information between patients and physicians and, in particular, where the information is maintained in a patient data structure that may be communicated between a physician computer and a patient device.

Providing health care to patients who require considerable medical attention, such as elderly persons or those having debilitating illnesses, can be problematic on many fronts. For instance, when the patient visits a new physician, the patient must spend time filling out patient medical and prescription history and insurance information. For elderly or ill patients, this process can be difficult and often yields inaccurate or incomplete information. Further, the physician and staff must spend considerable time questioning the patient on past symptoms, illnesses, and current medications and therapies. Again, if the patient is elderly or somewhat incapacitated, then they will likely not be able to garner an adequate, let alone complete, picture of the patient's current state. This failure to provide the treating physician complete information may cause the physician to misdiagnose the patient's problem or prescribe inappropriate or redundant medications and therapies.

Still further, an elderly or ill patient may have trouble keeping track of all the medication they must take and the schedule for their medication, as well as remembering all their medical appointments. Further, a care taker who is responsible for assisting a patient on a daily basis may have difficulty keeping track of all appointments and medication schedules.

For these reasons, there is a need in the art for an improved patient medical information system that allows patient medical information, such as medical history, insurance information, prescription information, and visit scheduling to be effectively communicated to the patient, the care provider for the patient, and the different doctors and physician offices the patient must visit.

To overcome the limitations in the prior art described above, preferred
15 embodiments disclose a method, system, and program for maintaining electronic patient
medical information. An electronic patient data structure is generated to include patient
biographical information and one of medical history information, medication schedule
information, and appointment schedule information. The patient data structure is
electronically transmitted between a physician computer and a portable patient device.
20 The patient data structure is capable of being modified.

In still further embodiments, log information is generated indicating modifications to information in the patient data structure. The log information is read-

only and once generated cannot be altered at the physician computer or within the portable patient device.

Still further, the physician computer may add one of appointment and medication events to the patient data structure. One appointment event indicates a scheduled visit at the physician office and one medication event indicates a drug prescription. The physician computer may transmit the modified patient data structure to the patient device.

Preferred embodiments provide a medical information system that allows a patient to maintain a patient data structure including detailed patient biographical, insurance, and medical history information. This allows the patient to visit a physician's office for a first time without having to fill out the registration forms as all the information the physician needs is provided in the patient data structure, which is electronically transmitted from the portable patient device to the physician computer. Further, neither the patient nor physician have to spend time discussing the patient's medical history and current medications and therapies, as such information would be embedded in the patient data structure. This not only saves time, but allows the physician to provide a faster and more accurate diagnosis because the physician has access to detailed medical history information. This is especially important if the patient is physically or mentally impaired and cannot answer the physician's questions accurately.

Further, preferred embodiments provide medication and appointment scheduling information which the patient can easily access to determine their medication and appointment schedule. The physician may access the patient's medication and appointment schedules to determine current medications the patient is taking and the patient's schedule for the purpose of avoiding scheduling a conflicting appointment or medication.

Still further, the use of the unalterable, read-only log information ensures data integrity because any attempts by either the patient or physician to improperly modify patient medical information are logged and, thus, can be detected.

BRIEF DESCRIPTION OF THE DRAWINGS

Referring now to the drawings in which like reference numbers represent corresponding parts throughout:

FIG. 1 illustrates a computing environment in which preferred embodiments are
5 implemented;

FIG. 2 illustrates an arrangement of patient information in a patient record in accordance with preferred embodiments of the present invention;

FIG. 3 illustrates different displayed views of patient information from information maintained in the patient record in accordance with preferred embodiments
10 of the present invention;

FIG. 4 illustrates logic implemented in a patient computer and patient personal digital assistant (PDA) device to manipulate and view patient information within a patient record in accordance with preferred embodiments of the present invention; and

FIG. 5 illustrates logic implemented in a physician computer to manipulate and
15 view patient information within a patient record in accordance with preferred embodiments of the present invention;

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the following description, reference is made to the accompanying drawings
20 which form a part hereof and which illustrate several embodiments of the present invention. It is understood that other embodiments may be utilized and structural and operational changes may be made without departing from the scope of the present invention.

FIG. 1 illustrates a computing environment in which preferred embodiments are
25 implemented. A patient portable personal digital assistant (PDA) 2 is capable of communicating with a patient computer 4 and with a physician computer 6 at the physician's office. The physician computer 6 may be part of a local area network (LAN) at the physician's office that connects to a computer including a patient database. The

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In preferred embodiments, patient medical information is maintained as database records. FIG. 2 illustrates a preferred embodiment of a data structure for a patient record 18i in the patient database 18. The patient database 18 is comprised of patient records 18i for each patient the physician is treating. A patient record includes the following fields:

Patient ID 20: Unique identifier of patient, such as social security number, providing the key column for patient records in the patient database 18.

Patient Bio 22: This field is comprised of subfields including biographical information of the patient, such as full name, social security number, current address, sex, family contact information, insurance billing information, etc.

Medical History 24: This field is comprised of a string of one or more medical event subrecords 24a-24n. A medical event subrecord is created upon the occurrence of a medical event, such as an illness, routine check-up or other event resulting in a consultation with a physician. Each medical event subrecord would include fields for the date of the medical event, diagnosis, prescribed medication, hospitalization, length of symptoms, outcome, treating physician, etc.

Medication Schedule 26: This field is comprised of a string of one or more current prescription subrecords 26a-26n. A prescription subrecord is created whenever a doctor prescribes medication. Each prescription subrecord would include fields for the date of prescription, dosage schedule, number of refills, prescribing physician, reason for prescription, and whether the prescription was filled and taken as scheduled. Fields may also be maintained for the patient to indicate whether they took a dosage to allow both the physician and patient to determine whether the patient has been taking the prescribed medication. Further, there may be a pharmacist field indicating whether the subscription was filled. Still further an alarm function may be provided to allow the patient to set an alert to activate at a scheduled medication time and notify the patient of the scheduled event. This notification function could use existing alarm functions in the system (e.g., patient PDA 2, patient 4 and physician 6 computers) or any other alarm/scheduling software routine known in the art to schedule and generate an alarm notification. In preferred implementations, the patient PDA software could not modify the pharmacist field as well as the information in the prescription subrecords 26a-26n entered by the physician.

Appointment Schedule 28: This field is comprised of one or more appointment subrecords 28a-28n. Each appointment subrecord includes fields for the date of

the appointment, physician name, reason for appointment, etc. Again, an alarm function may be provided to allow the patient to set an alarm to activate to alert the patient of a scheduled appointment.

Patient Log 30: This field is comprised of one or more log subrecords 30a-30n.

5 Each log subrecord logs any additions, deletions or modifications to any field or sub-record of patient information. Each log subrecord indicates the date of change to the patient information, person or entity making change (e.g., patient or physician), key to record being changed, and change made. All the software programs 12, 14, and 16 that are capable of modifying a patient record 18i would
10 include the capability to automatically write an entry to the log record whenever information in the patient record 18i is modified. For security reasons and to ensure the integrity of patient information, patient log records are read-only such that neither the physician software 14, patient desktop software 12, patient PDA software 16 nor any other text editor or program can modify the log subrecords.
15 This ensures that no one can change any patient information without such change being recorded in an unalterable record. Thus, a doctor cannot alter the patient log 30 to reverse any wrongful entries nor can the patient modify records to hide medical diagnosis, alter prescriptions, etc. This read-only feature of the patient log 30 ensures data integrity and accuracy of the information in the medical
20 system.

The patient database 18 includes patient records 18i for multiple patients. The patient PDA 2 and patient computer 4 would maintain one patient record, including sub-records 20-30. Further, people may additionally store another person's patient record
25 (e.g, a child, relative, friend, or recipient of paid-for-care) in their own patient PDA for convenience when acting as a care giver on behalf of another. The patient PDA 2 would communicate the patient record to the physician computer 6 and patient computer 4 via the communication links 8 and 10, respectively. The software programs 12, 14, and 16

provide the physician and patient views to the information in the patient record and an interface to alter fields and sub-records of the patient record.

FIG. 3 illustrates the views that may be displayed in the patient PDA 2 by the patient PDA software 16 and how such views relate to the patient record 18*i*. Upon
5 selecting the medical information program using the patient PDA 2 graphical user interface (GUI), the patient would view the main menu 40 displayed in the PDA 2 GUI window. From this main menu 40, the patient may select one of five views: the patient bio view 42, the medical history view 44, the medication schedule view 46, the appointment schedule view 48, and the log view 50. Selection of one of the five
10 displayed options on the patient PDA 2 using a pen stylus or other input device would cause the selected view 42, 44, 46, 48, 50 to be displayed on the patient PDA 2 display screen.

The patient bio view 42 displays subfields from the patient ID 20 and patient bio 22 fields in the patient record 18*i*. The medical history view 44 displays the medical
15 event subrecords in the medical history field 24 of the patient record. The medical history view 44 may provide horizontal and vertical scrollable bars to allow the user to selectively scroll to view all the displayed fields in each medical event subrecords and all the medical event subrecords. The medication view 46 provides a calender display of a medication schedule, i.e., when to take prescribed medication, which is derived from the
20 prescription subrecords 26a-26n in the medication schedule field 26 of the patient record 18*i*. Next to each scheduled medication dosage is a check box, e.g., check box 52, in which the patient can indicate that they took the scheduled dosage. Further, an alarm can be set to activate at the time of the scheduled dosage to alert the user of the scheduled event.

25 The medication view 46 shows a daily schedule of when to take medicine during the indicated day. View 48 is an example of a weekly view, in which a cell for each day of a week is displayed. The cells that include a block indicate a scheduled event, such as medication to take or a doctor appointment. Selection of the blocked cell may cause the

5 for the day.

the day before the appointment, etc. The log view 50 displays the read-only log subrecords 30a-30n indicating changes made to any of the other fields and/or subrecords in the patient record.

15 would provide GUI panels to allow a member of the physician's staff to edit information in any field and/or subrecord of a patient record 18*i*. As discussed, the physician computer 6 maintains a patient database 18 including a plurality of patient records 18*i*. The physician software 14 may be used to edit any patient record 18*i*. Moreover, the physician software 14 may provide the display of an appointment schedule that displays
20 scheduled appointments for all patient records 18*i* in the patient database 18. This would be accomplished by locating in each patient record 18*i* the appointment subrecord 28*i* for that physician. In this way, the physician software 14 may include a scheduling tool to allow the physician's staff to manage appointments for all patients. The patient PDA software 16 would include the capability to allow a user to modify fields and/or
25 subrecords from the patient record 18*i* displayed in the views 42-50 using the patient PDA 2 input. As discussed, all the software programs 12, 14, and 16 would automatically update the patient log 30 with an entry (log subrecord) whenever the patient

The medical event, prescription, appointment, and log subrecords in the patient record 18i may be generated at different physician offices, wherein the physician offices include an installed version of the physician software 14 to modify and manipulate patient records.

FIG. 4 illustrates logic implemented in the patient desktop software 12 to manipulate a patient record 18*i* and, in particular, handle the display and modification of information displayed in the views 42-50. The patient desktop software 12 would display in GUI panels on the display of the patient computer 4 the data displayed in the views 42-50 described with respect to the patient PDA 2. However, when the patient computer 4 is a desktop or laptop system, it has a display that is capable of displaying more information than the patient PDA 2, and thus the layout of the views 42-50 would be different than the layout shown with views 42-50 displayed on the patient PDA 2 as shown in FIG. 3.

25 With respect to FIG. 4, control begins at block 100 with the patient desktop software 12 establishing a communication link with a patient PDA 2 and downloading a patient record. A password may be required to access a patient record. The patient computer 4 then reads the patient record over the communication link 10 into memory. Alternatively,

THEORY

Also, at any time, the user at the patient computer 4 can update the patient record 18i with any changes made. The patient computer 4 can further transfer a modified patient record 18i to the patient PDA 2 for storage therein. The advantage of this approach is that the patient may more conveniently edit patient information, such as the patient bio 22 fields, at a desktop or laptop patient computer 4 than a patient PDA which typically has a limited input mechanism, as opposed to the full keyboard available with desktop and laptop computers. Another advantage of using the patient desktop software 12 is that in the event the patient PDA 2 is lost or stolen, the patient would have a backup

[illegible]

FIG. 5 illustrates logic implemented in the physician software 14 to interact with the patient PDA 2 and obtain and update a patient record 18i, and display views of the patient record. The physician software 14 performs many of the same operations as the patient desktop software 12 to interact with the patient PDA 2 and display views of the patient record 18i, with a few exceptions. One difference is that when displaying the appointment view, the physician software 14 displays (at blocks 210 and 212) appointments in the subrecords for all the patient records 18i in the patient database 18 as well as the appointments the current patient has with other physicians. This ensures that the physician staff member scheduling the appointment will not schedule an appointment that conflicts with appointments both the physician and patient have already made. Further, unlike the patient software 12 and 16, the physician software 14 allows the physician to modify prescription subrecords 26a-26n to electronically write patient prescriptions. In further embodiments, the physician software 14 may include the capability to digitally sign or encrypt a prescription with the physician public key so that the pharmacist can authenticate an electronic prescription within a prescription subrecord 26a-26n received from the patient PDA 2.

There are many advantages to the medical information system of the preferred
25 embodiments. First, is that a patient may use the ubiquitous PDA device to maintain all
the information needed to optimize a visit with a doctor. The patient PDA makes the first
time visits to a doctor's office much easier because the patient does not have to fill out
any forms. Instead, a communication link 8 is used to transmit the electronic patient

record from the patient PDA 2 to the physician computer 6, without any involvement on behalf of the patient, except making the PDA 2 available. The physician's staff can then automatically obtain accurate personal and insurance billing information. This is especially helpful if the patient is ill or injured and cannot accurately respond or if the patient's care giver does not have such information available. Still further the physician can obtain detailed patient medical history, current prescriptions, and current scheduled medical appointments without relying on the mental capacities of the patient as such information is embedded in the patient record stored in the patient PDA 2. This aspect is especially important because the physician, by having accurate medical history and current treatment information, will reach the correct diagnosis faster and avoid prescribing any treatments or medications that could be duplicative or harmful to the patient. Still further, the physician can be assured of the integrity of the information as any attempts by the patient to falsify or improperly modify the medical history can be detected from the information displayed in the log view 50.

The advantages of the preferred embodiment medical information system are numerous. No longer must a patient spend time filling out tedious and time consuming forms. Instead, all the patient must do is allow a communication link 8 to be established so the patient record 18i can be transferred from the patient PDA 2 to the physician computer 6. Further, if the patient has a complex medical illness requiring numerous medications that may affect mental and memory capabilities, such as AIDS or cancer, then they may readily determine their medication schedule and any pending physician appointments from the medication 46 and appointment 48 schedule views. No longer must they remember to keep the handwritten appointment reminder cards doctors provide, which are oftentimes lost or misplaced. Further, patients may download their patient record 18i to a personal computer, i.e., the patient computer 4, where they may review and edit their schedules 46 and 48 from their desktop or laptop at home or work. To interface with their medical information, all they need do is install the patient desktop software 12 on the desktop or laptop system. Further, they may want to use their patient

[illegible]

In the preferred embodiments, there were three described computing devices, patient PDA, patient computer, and physician computer. In further embodiments, additional computers may be added to the system. For instance, the patient may maintain a smart card to store the patient records. The physician would maintain a smart card reader to access the patient record in the card. In this way, if the patient cannot afford a PDA device, then the insurance company may provide a smart card to facilitate transfer of patient information to the physician's office thereby improving physician efficiency and reducing cost overhead. Still further, the patient may maintain a smart card reader at their computer to read information from the smart card to view at their personal computer. Yet further, newer smart card devices include limited displays. With such smart cards, the patient could review their medication and appointment schedule on the smart card display. Thus, any portable electronic device capable of providing non-volatile storage of a patient record may be used in place of the patient PDA 2 for the patient to take to a physician office, including those that do not include a display.

5 personal information.

20 events.

25 described logic and still conform to the preferred embodiments.

In summary, preferred embodiments disclose a method, system, and program for maintaining electronic patient medical information. An electronic patient data structure is generated to include patient biographical information and one of medical history

The patient data structure is electronically transmitted between a physician computer and a portable patient device. The patient data structure is capable of being modified.

15 ****PalmPilot is a trademark of 3COM Corporation; WorkPad is a registered trademark of the IBM Corporation; Revo is a trademark of Psion Enterprise Computing Ltd.**

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1 1. A method for maintaining electronic patient medical information,
2 comprising:
3 generating an electronic patient data structure including patient biographical
4 information and one of medical history information, medication schedule information,
5 and appointment schedule information; and
6 electronically transmitting the patient data structure between a physician computer
7 and a portable patient device, wherein the patient data structure is capable of being
8 modified.

1 2. The method of claim 1, wherein the portable patient device includes a
2 display, further comprising:
3 displaying, in the display of the portable computing device, views of the patient
4 medication and appointment schedule information stored in the patient data structure to
5 allow the patient to review scheduled medication and appointments.

1 3. The method of claim 2, further comprising:
2 indicating, with the portable patient device, that one scheduled patient medication
3 was taken; and
4 storing the indication in the patient data structure that the patient took the
5 scheduled medication in the patient data structure in the portable computing device.

1 4. The method of claim 1, further comprising setting an alarm to activate to
2 provide an alert of one scheduled patient medication or appointment.

1 5. The method of claim 1, further comprising generating log information
2 indicating modifications to information in the patient data structure, wherein the log
3 information is read-only and once generated cannot be altered.

1 6. The method of claim 1, further comprising:
2 adding, with the physician computer, one of appointment and medication events
3 to the patient data structure, wherein one appointment event indicates a scheduled
4 medical related visit and one medication event indicates a drug prescription; and
5 transmitting the modified patient data structure to the patient device.

1 7. The method of claim 6, wherein the patient device includes a display,
2 further comprising:
3 displaying, in the display of the patient device, views of the patient medication
4 and appointment schedule information stored in the patient data structure that were added
5 to the patient data structure to allow the patient to review scheduled medication and
6 appointments.

1 8. The method of claim 6, further comprising:
2 storing, with the physician computer patient data structures for multiple patients;
3 displaying, at the physician computer, an interactive schedule of patient
4 appointments from appointment schedule information maintained in the patient data
5 structures, wherein appointment events are added to one patient data structure through the
6 displayed interactive schedule of patient appointments.

1 9. The method of claim 1, wherein the patient data structure further includes
2 patient insurance billing information that can be used to generate insurance claims for
3 patient services.

1 10. The method of claim 1, further comprising using an additional computer to
2 modify information in the patient data structure and transmit the modified patient data
3 structure to the portable patient device.

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1 11. A medical information system for maintaining electronic patient medical
2 information for use in a physician computer and a portable patient device, the physician
3 computer comprising:
4 a computer readable medium including an electronic patient data structure
5 including patient biographical information and one of medical history information,
6 medication schedule information, and appointment schedule information; and
7 at least one communication port capable of transmitting the patient data structure
8 to the portable patient device and receiving the patient data structure from the portable
9 patient device; and
10 means for modifying information in the patient data structure, wherein the
11 modified patient data structure is capable of being transmitted to the portable patient
12 device via the communication port.

1 12. The system of claim 11, wherein the physician computer further
2 comprises:
3 means for displaying views of the patient medication and appointment schedule
4 information stored in the patient data structure to allow the physician to review scheduled
5 medication and appointments.

1 13. The system of claim 12, wherein the physician computer further comprises
2 means for generating log information indicating modifications to information in the
3 patient data structure, wherein the log information is read-only and once generated cannot
4 be altered.

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1 17. A medical information system for maintaining electronic patient medical
2 information for use in a physician computer and a portable patient device, wherein the
3 patient device includes:
4 computer readable medium including an electronic patient data structure including
5 patient biographical information and one of medical history information, medication
6 schedule information, and appointment schedule information; and

22. The system of claim 17, wherein the patient data structure further includes patient insurance billing information that can be used to generate insurance claims for patient services.

1 23. The system of claim 17, further comprising an additional computer,
2 wherein the additional computer includes:
3 means for transmitting the electronic patient medical information between the
4 additional computer and the portable patient device, wherein the additional computer is
5 capable of modifying information in the patient data structure and transmitting the
6 modified patient data structure to the portable patient device.

1 24. The system of claim 17, wherein the portable patient device comprises one
2 of a smart card, palm computing device, hand-held computing device, and laptop
3 computer.

1 25. An article of manufacture for use in a medical information system to
2 maintain electronic patient medical information for use in a physician computer and a
3 portable patient device, the article of manufacture comprising at least one computer
4 program capable of causing the physician computer to perform:
5 reading an electronic patient data structure including patient biographical
6 information and one of medical history information, medication schedule information,
7 and appointment schedule information; and
8 transmitting the patient data structure to the portable patient device;
9 receiving the patient data structure from the portable patient device; and
10 modifying information in the patient data structure, wherein the modified patient
11 data structure is capable of being transmitted to the portable patient device via the
12 communication port.

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1 29. The article of manufacture of claim 25, further causing the physician
2 computer to perform:
3 storing patient data structures for multiple patients;
4 displaying an interactive schedule of patient appointments from appointment
5 schedule information maintained in the patient data structures, wherein appointment
6 events are added to one patient data structure through the displayed interactive schedule
7 of patient appointments.

1 31. An article of manufacture for use in a medical information system to
2 maintain electronic patient medical information for use in a physician computer and a
3 portable patient device, the article of manufacture comprising at least one computer
4 program capable of causing the portable patient device to perform:
5 storing an electronic patient data structure including patient biographical
6 information and one of medical history information, medication schedule information,
7 and appointment schedule information; and
8 transmitting the patient data structure to the physician computer;
9 receiving the patient data structure from the physician computer, wherein the
0 patient data structure is capable of being modified.

32. The article of manufacture of claim 31, further causing the patient device to perform:

displaying views of the patient medication and appointment schedule information stored in the patient data structure to allow the patient to review scheduled medication and appointments.

33. The article of manufacture of claim 32, further causing the patient device to perform:

indicating that one scheduled patient medication was taken; and

storing the indication in the patient data structure that the patient took the scheduled medication.

transmitting the electronic patient medical information to an additional computer,
wherein the additional computer is capable of modifying information in the patient data
structure and transmitting the modified patient data structure to the portable device.

THE 1990s

METHOD, SYSTEM, AND PROGRAM FOR ELECTRONICALLY MAINTAINING
MEDICAL INFORMATION BETWEEN PATIENTS AND PHYSICIANS

ABSTRACT

Disclosed is a method, system, program, and data structure for maintaining
5 electronic patient medical information. An electronic patient data structure is generated
to include patient biographical information and one of medical history information,
medication schedule information, and appointment schedule information. The patient
data structure is electronically transmitted between a physician computer and a portable
patient device. The patient data structure is capable of being modified.

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FIG. 1

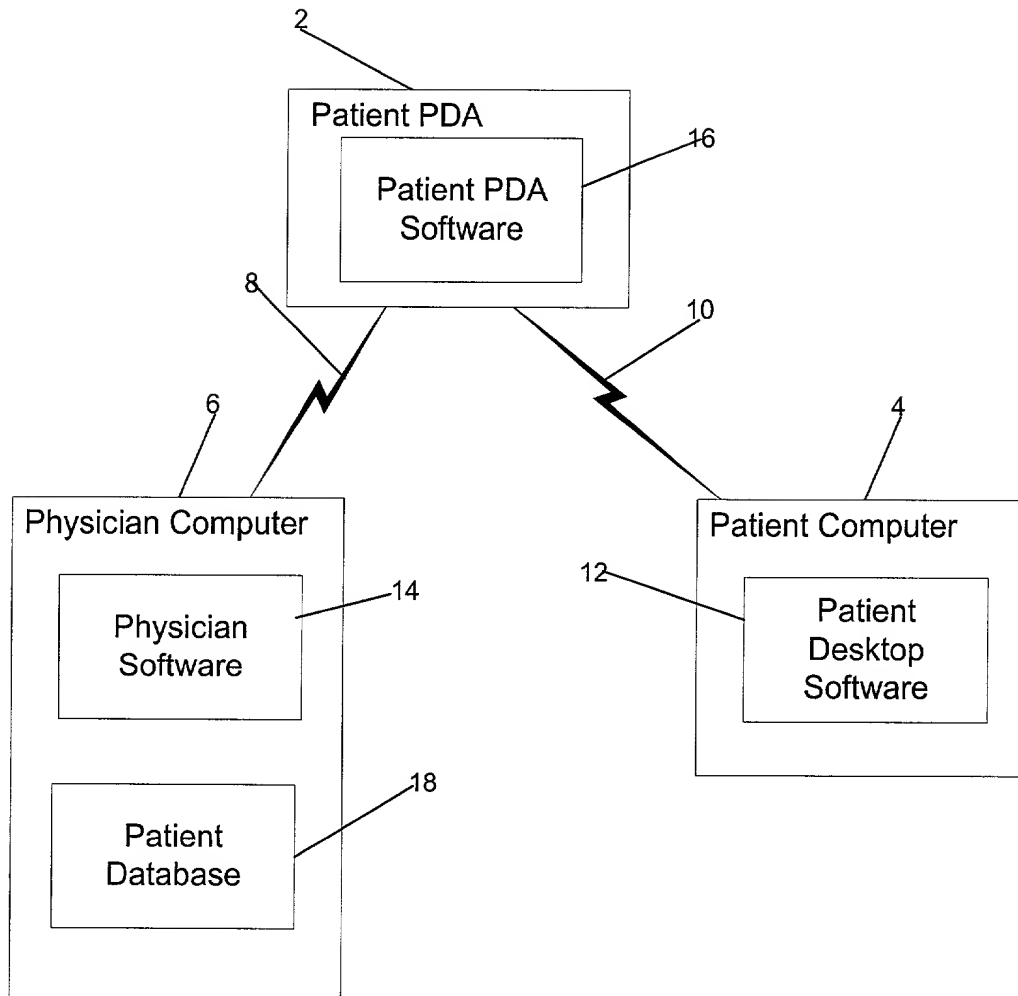
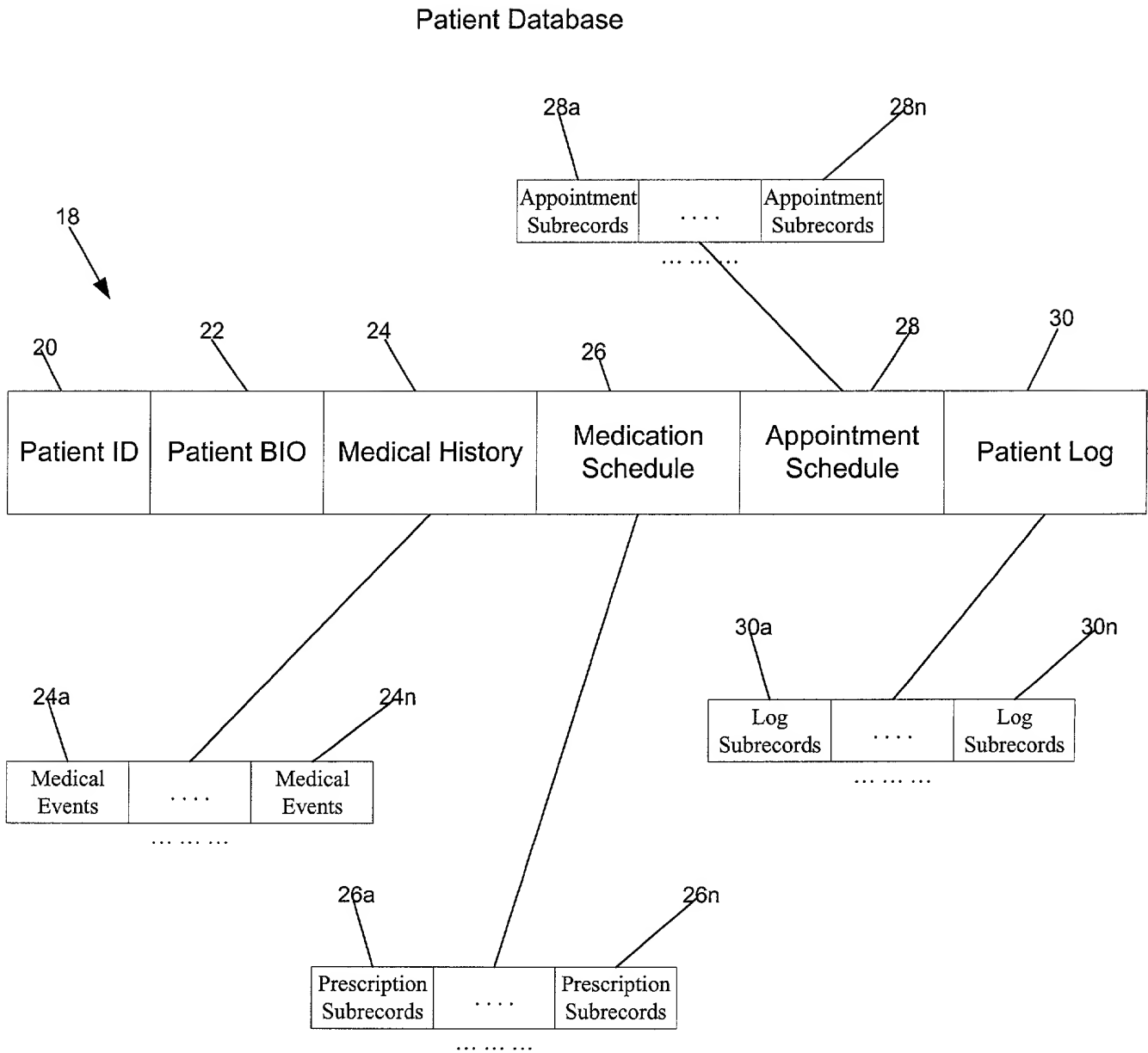


FIG. 2



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FIG. 4

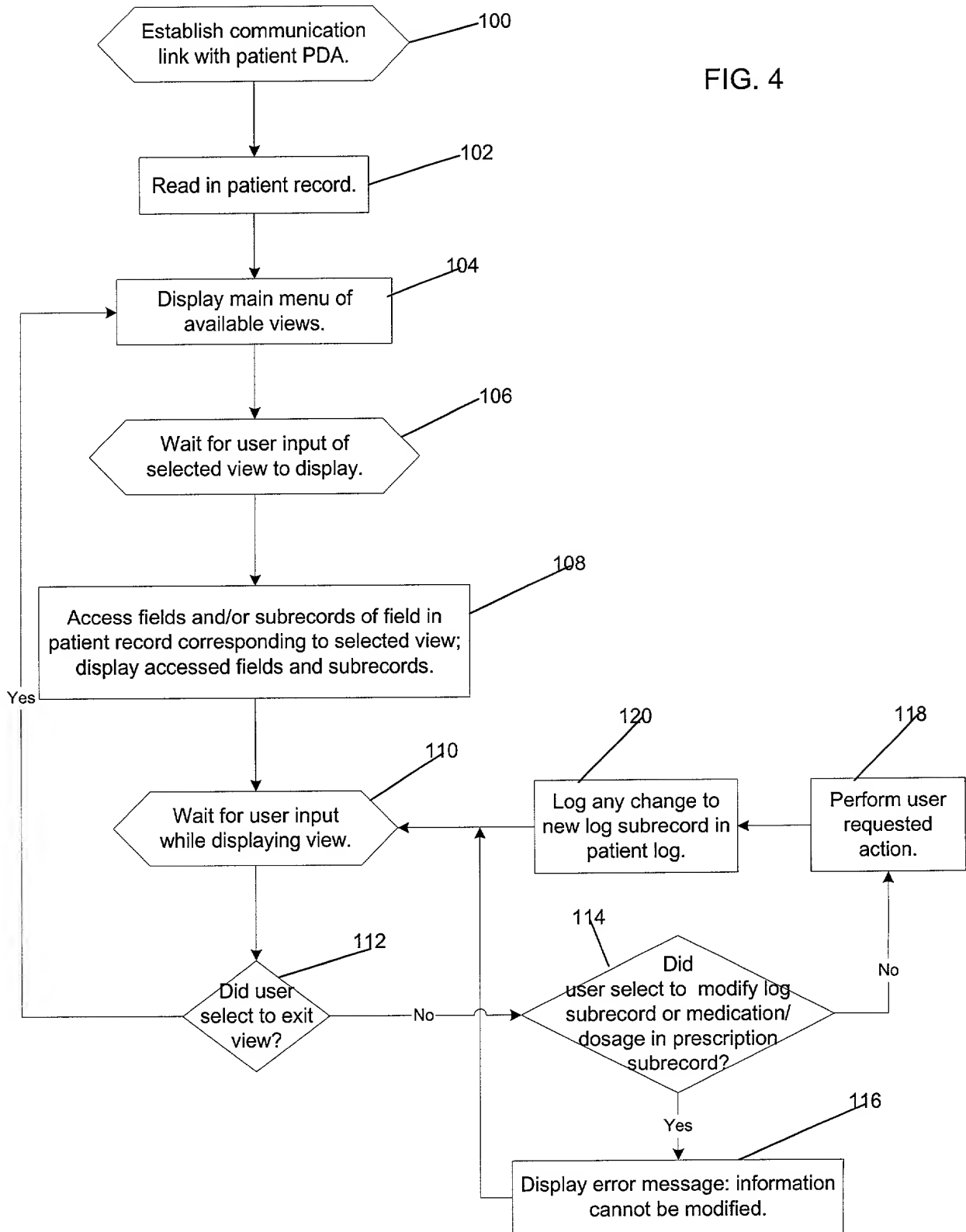
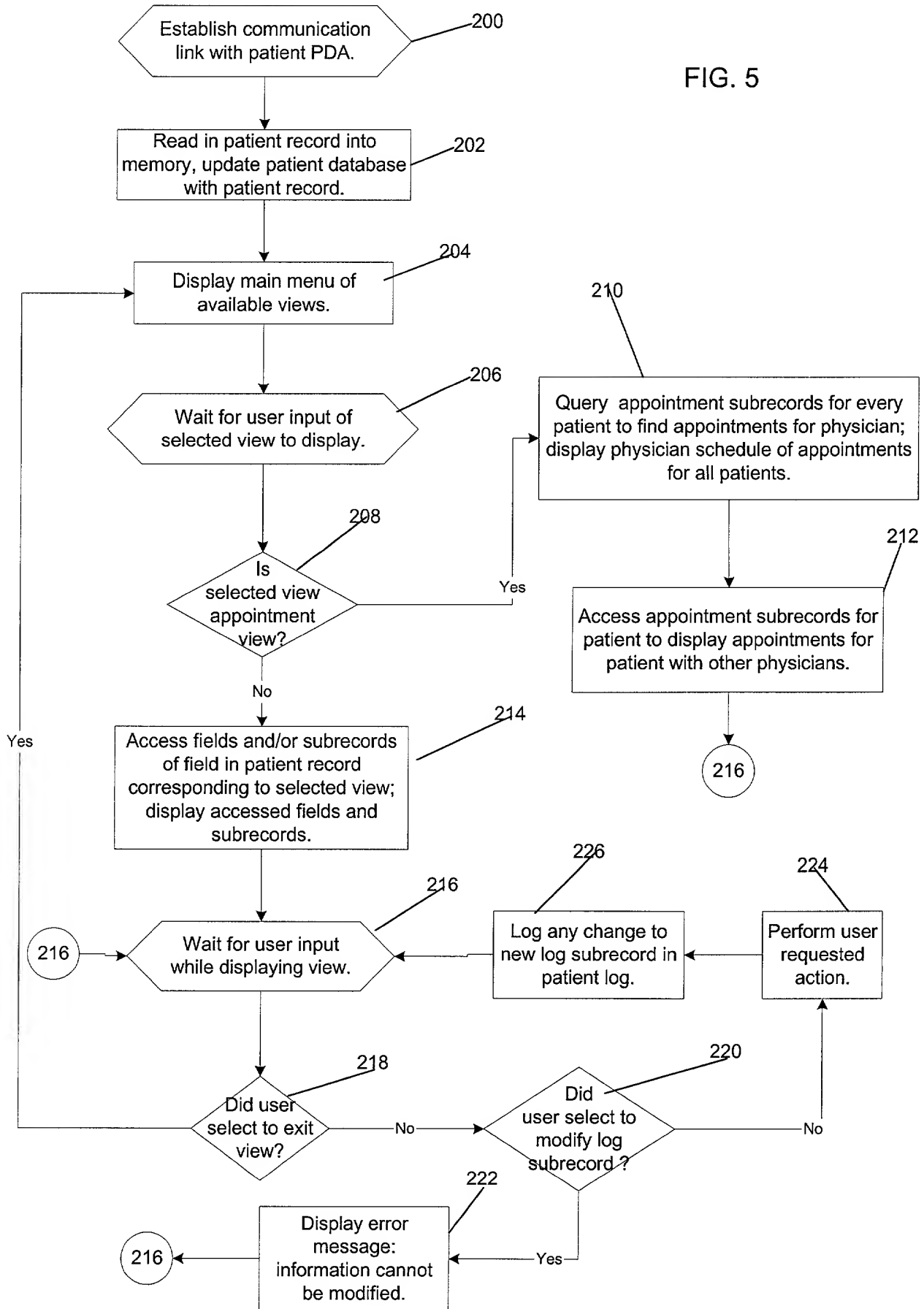


FIG. 5



As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD, SYSTEM, AND PROGRAM FOR ELECTRONICALLY MAINTAINING MEDICAL INFORMATION BETWEEN PATIENTS AND PHYSICIANS

the specification of which (check one)

☒ is attached hereto.

☐ was filed on _____

as Application Serial No. _____

and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

☐ None ☐ Yes ☐ No
(Number) (Country) (Day/Month/Year Filed)

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56, which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

☐ None
(Application Serial No.) (Filing Date) (Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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